

Remarks

Claims 1-22 are pending in the application and each was rejected. By this paper, claims 1, 10-13 and 15-17 are amended. Based on the following, consideration of the amended claims, and reconsideration of the remaining claims, are requested.

Claim Rejections—35 U.S.C. § 112

The Examiner rejected claims 12-16 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. In particular, the Examiner states that "[t]he term 'distance' in claims 12-16 is used by the claim to mean 'difference or delta', while the accepted meaning is 'a length'." By this paper, claims 12, 13, 15 and 16 are amended to more particularly point out and distinctly claim the subject matter of the invention. Specifically, in each of these claims, the word "distance" has been changed to "difference". This change is fully supported by the specification, in which a distance (d) is illustrated graphically in Figure 2 as the difference between two power levels. Moreover, the text of the specification further supports this language, describing the distance (d) as an offset value—see, e.g., paragraph 0030. Applicants submit that claims 12-16 are in compliance with § 112, second paragraph, and respectfully request these rejections to be withdrawn.

Claim Rejections—35 U.S.C. § 102

The Examiner rejected claims 1, 2, 5-11 and 13-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2003/0088343 (Ochiai et al.). By this paper, claims 1, 10, 11 and 17 are amended to more particularly point out and distinctly claim the subject matter of the invention. For example, amended claim 1 recites a method for controlling engine start in a vehicle that includes the step of "determining an engine starting power level for the energy storage device, the engine starting power level being less than the discharge power limit for the energy storage device for a given set of conditions, and

being related to an amount of output power of the energy storage device necessary to operate the electric machine to provide the starting torque to the engine...." Similarly, claim 10 recites a method for controlling engine start in a vehicle that includes the step of "determining a first output power level for the energy storage device that is less than the discharge power limit for a given set of conditions, the first output power level being based at least in part on an amount of output power required by the electric machine to provide the starting torque for the engine...." Claim 17 recites a vehicle that includes at least one controller that is "configured to determine an engine starting power level for the energy storage device that is less than the discharge power limit for a given set of conditions, and start the engine when the output power of the energy storage device is at or above the engine starting power level...." No such elements are expressly or inherently described in Ochiai et al.

The method described in Ochiai et al. is illustrated in Figure 3, and described in the text on page 4. Initially, a driver turns on an ignition switch—this is not shown in Figure 3, but is explained in paragraph 0048. At S11 a basic start-up torque requirement is set. At S12 a discharge power upper limit for the battery is set. At S13 an inquiry is made as to whether the discharge power of the battery exceeds the discharge power upper limit previously set at S12. A new start-up torque value is then determined at S14 or S15, depending on whether the answer to the inquiry at S13 is "no" or "yes". Thus, the method of Ochiai et al. contemplates the discharge power limit of the battery being exceeded in some situations, and then compensates by making an adjustment to the start-up torque after this condition is discovered. This is in contrast to the invention as claimed in amended claims 1, 10 and 17. As specifically recited in each of these claims, a power level for an energy storage device is determined, where this determined power level is less than the discharge power limit for the battery. No such determination is expressly or inherently described in Ochiai et al.

In addition to the foregoing, each of claims 1, 10 and 17 recite that the engine is started when the output power of the energy storage device has at least reached the previously determined power level—which, as specifically recited in the claims, is lower than the discharge power limit of the energy storage device. Thus, the invention as recited in

claims 1, 10 and 17 helps to ensure that the discharge power limit will not be reached prior to starting the engine. In this way, the torque output by the electric machines does not need to be adjusted. This helps to ensure a transparent engine start for the vehicle operator. This is unlike the method described in Ochiai et al., which describes starting a vehicle, and then comparing the discharge power limit of a battery to the discharge power upper limit. In contrast, the present invention uses a power level lower than the discharge power upper limit to help ensure that the engine can be started while never reaching the discharge power upper limit. Therefore, amended claims 1, 10 and 17 each contain elements that are neither expressly nor inherently described in Ochiai et al., and are therefore not anticipated by that reference.

Amended claim 1 is the base claim for claims 2 and 5-9, amended claim 10 is the base claim for claims 11 and 13-16, and amended claim 17 is the base claim for claims 18-22. Each of these dependent claims contains all of the elements of its respective base claim, as well as additional elements which further distinguish it from the cited reference. Therefore, each of claims 2, 5-9, 11, 13-16 and 18-22 contains elements which are neither expressly nor inherently described in Ochiai et al., and none of these dependent claims is anticipated by that reference.

Claim Rejections—35 U.S.C. § 103

The Examiner rejected claims 3, 4 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Ochiai et al. Amended claim 1 is the base claim for claims 3 and 4, and amended claim 10 is the base claim for claim 12. Each of these dependent claims contains all of the limitations of its respective base claim, as well as additional limitations which further distinguish it from the cited reference. Therefore, each of claims 3, 4 and 12 include the steps of determining a power level that is less than the discharge power limit for an energy storage device, and starting an engine when the output power of the energy storage device has at least reached the previously determined power level. Ochiai et al. neither teaches nor suggests such limitations. In fact, Ochiai et al. specifically teaches away from the invention as claimed in claims 3, 4 and 12, by teaching the use of a discharge power upper limit to compare to a

discharge power of a battery to determine a torque adjustment. First, one of the problems the present invention solves is that it can eliminate the need to make such torque adjustments. Second, the present invention uses a power level that is specifically set to be below the discharge power upper limit for the energy storage device. Therefore, Ochiai et al. teaches away from the present invention, and does not render obvious any of claims 3, 4 and 12.

Based on the foregoing, allowance of each of the pending claims is requested.

Respectfully submitted,

Ryan McGee et al.

By Marc F. Malooley
Marc F. Malooley
Reg. No. 50,624
Attorney/Agent for Applicant

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BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400
Fax: 248-358-3351